THE PLANT DISEASE REPORTER

LIBRARY
RECEIVED
★ DEC 21 1940 ★
U.S. Department of Agriculture

Issued By

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

Volume XXIV Number 22

December 1, 1940

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Volume XXIV Number 22

December 1, 1940

IN THIS ISSUE

Reports on potato late blight have been contributed by pathologists in various States, page 452.

Downy mildew is widespread on cabbage in southern Georgia, according to Huey I. Borders, page 461.

Glenn KenKnight reports the results of peanut disease surveys in certain Texas counties, page 461.

Rusts have been widespread on cereals in Kansas this fall according to C. O. Johnston, page 462.

Check list revision (Caryota to Castanopsis) by Freeman Weiss, page 463.

INCIDENCE OF POTATO LATE BLIGHT IN 1940

The Survey wishes to thank the contributors of these reports. Some promised additional information will be included in a future number of the Reporter.

LATE BLIGHT AND OTHER DISEASES IN MAINE: Late blight [Phytophthora infestans] was of minor importance in most parts of Aroostook County this past season. Dr. Folsom has informed me that he saw none in his plots at Monmouth, Maine. This is 145 miles south of Bangor. I examined, in September, quite a number of fields near Houlton and in southern Aroostook County and saw no blight. Some of the fields had not been sprayed sufficiently to control late blight.

Late blight was not apparent on farms near Presque Isle and the area south to Houlton.

There were some farms along the Aroostook River Valley north of Presque Isle where the disease caused great losses. This area is characterized by frequent heavy fogs and dews. Some farmers in these areas permitted the disease to get started early in the season and were unable to check its spread. I saw some fields of potatoes that were 50 percent defoliated in August.

The disease got an early start in the area near Easton (southeast of Presque Isle) and caused some worry among the growers. I did not hear that serious losses resulted.

Leaf roll [virus] apparently spread extensively this past season in Aroostook County and we expect a considerable amount of loss because of net necrosis in the Green Mountain variety. The commercial fields will probably have a considerable amount of leaf roll and mosaic [virus] in 1941 and progress in seed improvement will be hampered.

I might add that the "purple top" disease [undet.] is becoming of importance in Maine. (Reiner Bonde, Maine Agricultural Experiment Station. November 12).

On the whole, potato blight which seemed to be prevalent here in July did not cause the trouble we expected it to.

Along the Aroostook River from Presque Isle to Caribou, the condition was very serious and affected yield and quality materially. This is a relatively small area.

To offset this, blight was not bad in the St. John Valley where last year it was a serious factor. (Verne C. Beverly, County Agent, Aroostook County, November 15).

LATE BLIGHT IN NEW HAMPSHIRE: Late-blight of potato appeared in New Hampshire earlier than usual this year. The first recorded observation of it was in a field near Concord, reported by E. W. Holden, county agent, about July 10. At a meeting shortly after, many of the growers were warned about it and told to redouble their efforts in spraying as a protection.

About a week later on a seed certification inspection in northern New Hampshire, the writer observed sporadic outbreaks in a few fields. For the most part it was held in check fairly well by subsequent spraying. (Stuart Dunn, University of New Hampshire, November 1).

VERMONT: Late blight was not generally serious in Vermont fields where a fair degree of spraying was carried out. There were, however, cases where plants grew late in the season and, in spite of spraying, a moderate infection developed, followed by tuber infection running up to 10 or 15 percent.

In the small fields, primarily for home use, much tuber rot occurred. Casual observations and reports would put this loss as high as 50 percent in many cases. There are no figures in this department upon which an accurate estimate of loss throughout the state could be based. (Harold L. Bailey, Vermont State Department of Agriculture, November 9).

MASSACHUSETTS: The disease was first observed in Hampshire County on July 5 in a field of Green Mountain potatoes in early bloom. During July, it made slight headway in unprotected or poorly protected fields in the southeastern part of the state, particularly near the shore in Bristol County. It remained more or less inactive over all the state during late July and through the first half of August, but became widespread on unprotected vines during the unusually cool, damp (nights) weather of August 20-29. All in all, there was little or no loss from either top injury or tuber decay anywhere in the State in the greater part of the acreage which was properly protected to the end of the growing season. In unprotected gardens and commercial plantings, however, reduction in yield due to premature death of the vines was moderate to heavy, and in the same fields, losses from tuber decay were very light to severe, depending upon the amount of rainfall in different sections during August and the first half of September. (O. C. Boyd, Massachusetts State College, November 4. See also PDR 24: 257; 386).

EARLY BLIGHT MORE IMPORTANT THAN LATE BLIGHT ON BOTH POTATO AND TOMATO IN RHODE ISLAND: During 1940 only the merest trace of Phytophthora infestans appeared on the leaves of plants in a few scattered fields. I estimate that it killed less than one-half of 1 percent of the foliage.

Flea beetles, leaf hoppers, and early blight [Alternaria solani] were our chief troubles this year as shown by notes on spraying activities.

Oddly enough, however, a considerable amount of late blight rot appeared on tomato fruits the last half of September and during early October, yet the disease was not seen on tomato foliage. I am unable to explain this. However, less than 1 percent of the total tomato crop was damaged by phytophthora rot. Again, our chief tomato trouble was early blight, which reduced yields from 5 to 50 percent.

Although our growers spray their potatoes regularly with Bordeaux mixture, late blight occurs about once in every 4 years. The Bordeaux mixture acts chiefly as an insect repellent and partially controls the Alternaria blight. (Frank L. Howard, Rhode Island State College, November 1).

CONNECTICUT: It is the general impression of our staff that late blight was almost if not quite absent from Connecticut in 1940. This impression has been confirmed by correspondence with several of our prominent potato growers. (James G. Horsfall, Connecticut Agricultural Experiment Station, November 20).

DAMAGE TO NEW YORK POTATOES FROM LATE BLIGHT AND FREEZING WEATHER IN THE FALL: The year 1940 must be classed in New York State as a potato blight year. Before the end of July, the disease was well established on Long Island and in central and western New York. Unfavorable blight weather held it in check for a time during the summer but it continued to persist and to cause damage throughout the growing season. A frost in late August injured potato vines in some sections but late potatoes in most places remained green until the freeze of the middle of October. Infection of tubers was rather general previous to the freeze which, also, caused some damage to the tubers.

A questionnaire sent to county agents of the State regarding damage to potatoes from late blight and freezing was answered by 39 of them, including all the important potato-growing counties. From these reports, it appears that the loss from late blight was severe or very severe in 22 counties, mainly in western New York and the southern tier from west to east; moderate in most of the central counties and in Suffolk County; and slight in most northern counties and in Nassau County. Damage from frosts and freezing has been relatively severe throughout western New York and, to some extent, in the central part of the State. The total loss from late blight and freezing has probably not been fully observed, as reports from farmers continue to be received indicating additional decay in storage from these causes. (M. F. Barrus, New York State College of Agriculture, November 28).

NEW JERSEY: In the period 1929 to 1940 inclusive, during which time I have been inspecting seed potatoes, I have seen late blight only a few times and then only in isolated cases where air drainage or a low spot in the field or some other factor acted as a predisposing factor in the inception of the disease, except in 1940. In 1940 the late crop was subjected to a rainy week with cool temperatures the last week of August, and an exceptionally heavy rain (as much as 10 inches) on September 1, which thoroughly soaked the ground. Then, during the second and third weeks of September, temperatures dropped into the 50's and in some cases as low as 48. During this 2 week period heavy dews occurred every night and plants did not dry off until 11 or 12 o'clock in the morning.

Late blight made its appearance in most fields because they had not been sprayed, due to difficulty in getting equipment through the fields after the heavy soaking of September 1, and spread like fire through some fields, causing the complete destruction of the foliage. Incidental to this report, I did observe late blight on the early crop in 1938, rather severely damaging some few fields belonging to growers who did not provide adequate Bordeaux protection. Losses reported to me that year amounted to as high as 50 percent. Potatoes rotted in the ground.

In the fall of 1940, the late crop alone was affected, except perhaps some potatoes grown in the northern part of the State which still had foliage during the second and third weeks of September. I know of one small garden plot of Green Mountains in Morris County in which there was 100 percent loss. In the seed crop, losses ranged from a slight trace to 100 percent, there being several patches in Central Jersey which were completely abandoned because of blight.

Mr. John Campbell of the New Jersey Agricultural Experiment Station reports that in 1940 late blight started on the commercial crop of potatoes and was observed in many fields of such later maturing varieties as Chippewa and Green Mountains during July. The first infection was observed July 20, at which time the disease was already well advanced and by the first week of September serious foliage injury had occurred in several fields of Chippewa and Green Mountain. Careful observation in many fields showed that little late blight injury occurred in commercial crop fields which had been thoroughly sprayed with Bordeaux mixture, although severe cases of blight developed in several fields which were dusted with copper-lime dust or received no fungicides. Mr. Campbell reports the blight on the commercial crop from Central as well as South Jersey, so the disease seemed to be state-wide, at least on late-maturing varieties of potato.

According to my observations blight was as common in Central Jersey as it was in South Jersey, the limiting factor being adequate spraying. It is my belief that blighted tubers showing at the time of digging are those which were infected while the vines still were green and carried

leaves of the plant affected with blight lesions. Weather during the digging period was not favorable to the further spread of the disease during the process of digging. Frost killed the plants at the ground, following which the vines dried up thoroughly, and potatoes were dug with the ground fairly dry and the tubers coming out mostly free of dirt.

I cannot accurately estimate the total damage in this fall crop, but would place figures somewhere around 20 percent, inasmuch as well-sprayed fields showed no loss and helped to compensate for those fields which were almost completely damaged.

There is another aspect to the way in which the crop was damaged, in that blight so rapidly defoliated some fields that the tubers never sized beyond hickory to walnut size, as against sprayed fields which produced a full crop equal to many of the crops grown during the early commercial season. (Paul B. Mott, Supervisor, Seed Certification, New Jersey State Department of Agriculture, November 12).

INCIDENCE AND CONTROL OF LATE BLIGHT IN PENNSYLVANIA: In Pennsylvania late blight was first found on July 3 in the southwestern portion of the State. The disease continued rather severely in these counties throughout the season. It appeared in the northern counties during the last of August. In this section small growers, who did not spray, harvested nothing. In the rest of the State late blight only made its appearance after the first of October on growth not covered by sprays, since most growers stopped spraying by this time. In these sections there was more tuber rot than in those in which the disease first made its appearance. Taking the State as a whole the loss was not great since most of the farmers who grew a considerable acreage followed an adequate spray program.

Probably the most interesting development in Pennsylvania in regard to the control of late blight has been the organization of spray rings through information supplied by plant pathology specialists on a more or less commercial basis. Groups of farmers have banded together to include 150 to 250 acres of potatoes and 30 to 60 farmers in each group. These farmers have then agreed to have their acreage sprayed at a definite price ($1.50 to $1.75) per acre per spray application throughout the growing season, materials being furnished by the operator of the spray machine, as is also water. This type of spray ring organization grew from some 640 acres in 1939 to well over 3,000 acres in the spray rings in 1940.

The organization of this type of spray ring has proved the means of supplying the small grower with the type of spray coverage that large growers have used in the past few years. Spray machines mounted on rubber-tired tractors are used. Either 8- or 10- row booms with 3 nozzles per row and 20 to 30 gallons per minute pumps have proved most satisfactory. It seems a definite step forward in the control of late blight and other foliage diseases since all operators of the spray machines in these rings are following the recommendations of the College as expressed by the extension service. (O. D. Burke, Pennsylvania State College. November 2).

DELAWARE: The disease was present in several plantings but in no instance was it felt to cause any commercial losses whether the plantings were sprayed or not. Evidently the season did not favor the disease this year. Last year losses from potato late blight were quite large and rather general. Not many potatoes are grown commercially in this state. (K. J. Kadow, University of Delaware, November 6).

MARYLAND: Potato late blight (Phytophthora infestans) was not so prevalent or severe in Maryland in 1940 as it was in 1938 and 1939. In Garrett County late blight was observed in only a few fields and was severe only in parts of fields adjacent to woods where the vines dried slowly after rains or heavy dews. No severe losses from late blight tuber rot were reported from Garrett County. An interesting observation was made in the Experimental potato plots in Garrett County. In the yield test plots which were sprayed 10 times with Bordeaux Mixture no late blight was observed on the tubers of any of the varieties which were tested. In another plot where resistance to late blight and hopper burn was being studied, and which was not sprayed, considerable late blight tuber rot was found in the same varieties, although practically no late blight was observed on the vines.

On the Eastern Shore a little late blight was found in most of the second crop Cobbler fields and in the fields of Dakota Reds, but it was severe only in low places in fields or in parts of fields adjacent to woods where the vines dried slowly. No reports of losses from late blight tuber rot were reported from the Eastern Shore, and none was found in the experimental plots at Pocomoke which were dug recently.

In one field in Anne Arundel County where several late potato varieties are being tested little blight was found in the tops of Sequoia potatoes, but late blight tuber rot was very prevalent in the part of the field where there was clay soil. In several hills which were dug in this part of the field 75 percent of the tubers had late blight tuber rot. U.S.D.A. seedling 46464, which is a cross between the McCormick and Katahdin varieties, was planted adjacent to the Sequoia variety in heavy clay soil. Many hills were dug, but only one tuber with late blight rot was found.

Severe late blight was found in the low part of a field of Dakota Red potatoes in Howard County. No reports of the amount of late blight tuber rot in this field have been received. The late potato crop is just being dug, and reports of the prevalence of tuber rot in this crop have not been received. (R. A. Jehle, University of Maryland. October 31).

SOUTHWESTERN VIRGINIA: Irish potatoes are not grown commercially to any great extent in Southwestern Virginia. However, I did observe late blight, Phytophthora infestans, present in a number of home gardens. Damage should be considered slight. We also observed this condition quite frequently on tomatoes. (S. B. Fenne, Virginia Agricultural and Mechanical College, November 2. See also PDR 24: 329).

WEST VIRGINIA: There was less late blight in West Virginia than in 1939, although the early part of the season was favorable for the development of the disease, and we were expecting a severe epidemic. The weather suddenly turned hot and dry in midsummer, and the latter part of the growing season was very unfavorable for late blight. The disease was present in small amounts in scattered localities in the State, but not a great deal of damage was done. The weather was dry at harvest time, and there was no tuber infection of consequence. (J. G. Leach, West Virginia University, November 1).

SOUTH CAROLINA: We had some late blight this past spring but there was no general infection. On the whole we think there was very little damage from this disease. We do know that there was some trouble from rot in transit that looks very much like the work of late blight but actual evidence on this is lacking. Dry weather for some time preceding harvest kept down what promised to be a heavy infection. In most cases when rot in transit occurred there were showers during the digging period. (W. C. Barnes, South Carolina Truck Experiment Station, Charleston, S.C.).

FLORIDA: Both George D. Ruehle, of Homestead, and A. H. Eddins, of Hastings, stated that the damage due to late blight was negligible in the fields last year. However, the disease was observed in the Homestead area in late December, 1939, and was quite generally distributed by the latter part of January. The freeze of January 27 and 28 killed both the potato vines and apparently the blight. (W. B. Tisdale, Florida Agricultural Experiment Station, November 12. See also PDR 24: 289; 364).

LOUISIANA: L. H. Person reported that late blight was observed in Louisiana for the first time since 1928, and that 1940 was apparently the most favorable season for its development that had been experienced in the State. (PDR 24: 253).

LOWER RIO GRANDE VALLEY OF TEXAS: Potato late blight is exceedingly variable in its occurrence in the Lower Rio Grande Valley. It appears to be dependent upon cool, moist weather at the time of emergence of the plants from the soil. In other words, in this section, we have the anomaly that late blight occurs early and early blight occurs late.

Late blight was serious here in the spring of 1937, exceedingly serious in 1938, did not occur at all in 1939 and 1940. (G. H. Godfrey, Texas Agricultural Experiment Station, Weslaco, November 5. See also PDR 24: 255).

MICHIGAN: Potato late blight infection became evident in certain of the Upper Peninsula counties about July 15. As early as this date it was also apparent in the counties of Emmet, Cheboygan and Presque Isle in the extreme northern part of the Lower Peninsula. In certain fields in both of these areas the disease had become severe by August 15 although in the Upper Peninsula it was not general until about August 25. In Presque Isle County by August 15 approximately 90 percent of the fields were showing some infection. From Emmet and Presque Isle south in the State, through the central part, as far south as Kent, Clinton and Lapeer Counties, the disease appeared first about August 15 but did not become severe until about September 1. In this area it is safe to say that practically 100 percent of the unsprayed potato fields showed heavy infection before the tubers were dug. In many cases owing to late planting of the crop and the severity of the disease, very poor yields were obtained. From the Kent-Lapeer county line southward the disease made its appearance about September 1 and became severe about September 10, reaching down to the Indiana line in scattered fields. In the lower part of the State, however, the disease was not so severe as it was in the central, northern, and Upper Peninsula sections.

The extent of loss to the potato crop in Michigan probably follows very closely the difference noted in the State Department Crops Report as of September 1 and November 1 of this year. On September 1 the forecast total yield was 26,250,000 bushels, while on November 1 this yield had been reduced to 22,500,000 bushels, a difference of 3,750,000 bushels. This roughly represents the loss to the Michigan crop in the field and it may include rotting in storage in certain of the northern counties where the crop had been harvested during the middle of September and early October.

Numerous letters being received now indicate that there is considerable shrinkage going on in the crop due to late blight rotting. We have had a fairly warm fall and this, coupled with the fact that potatoes were brought into storage and allowed to sweat somewhat, has increased the damage due to late blight in storage and pits. With the advent of colder weather which is now with us I think we will be able to see a decided retardation in the amount of rotting in storage. This will probably run through until extremely cold weather when it will be necessary to heat some of the storages, and after this heating period we can expect further late blight rot to develop.

I might add that in those fields which were sprayed thoroughly and at the proper time with plenty of Bordeaux mixture, the infection was held to a minimum in most cases and that the rotting in the hill and in storage has been negligible. This certainly has been a year to show the beneficial effects of spraying potatoes. (J. H. Muncie, Michigan State College, November 11).

WISCONSIN: The late blight disease was first observed in Oneida County on July 26 when fields were being examined for seed certification. It was quite well started in a few fields at that time. Certified and commercial growers were immediately advised as were also the county agents in potato producing counties. The State radio stations carried the news broadcast on August 2 or soon thereafter. During the month of August late blight developed extensively, especially in the heavier soil areas of northern Wisconsin, owing to frequent rains. However, restricted areas in northwestern part of the State received less rain and blight was less extensive. By September 10 blight was observed on the late crop in the Milwaukee area.

The Bordeaux spraying situation is of interest. As many as 12 applications were necessary in the Langlade and Oneida County areas to keep the foliage adequately protected. In some fields the condition of the soil was such as to make spraying impossible during heavy rains. In more cases, however, the spraying equipment was very inadequate. Furthermore, the prospective price returns on tubers did not warrant the purchase of new equipment and spray material.

A comparison between the seasons of 1940 and 1938 brings out the fact that the foliage phase of blight this year has been more prominent while the tuber rot phase has been much less. This is accounted for by the excellent digging conditions in 1940. Very little rain occurred after the 10th of September to cause spread of the fungus to the tubers. However, in a few local areas, heavy showers occurred and the rot was excessive, in some cases up to 85 percent loss.

Storage Conditions. Many growers have conditioned their crop this season by spreading the tubers as dug in temporary shallow storage for a week or ten days. Then after the tubers have passed thru a sweat they are re-sorted and sold or put in winter storage. Also, in some of the newer storage houses, forced ventilation equipment has been installed.

The loss this year has been largely confined to the late crop and the early varieties that were planted late for seed purposes. The bulk of the Irish Cobbler crop was harvested before rot conditions prevailed. The new introductions, Sebago and Sequoia, have shown marked resistance to late blight and will be increased as rapidly as conditions permit. The losses from late blight should not exceed 4 percent in yield and 2 percent in grade or a total of 6 percent. (R. E. Vaughan and J. W. Brann, Wisconsin State College of Agriculture, November 4).

DOWNY MILDEW ON CABBAGE IN GEORGIA

A considerable amount of infection of seedling cabbage fields by the downy mildew of crucifers, Peronospora parasitica, has been observed in South Georgia recently. This disease is wide-spread throughout a number of counties, and several fields have been observed in which there is 100 percent infection of plants. (Huey I. Borders, Georgia Agricultural Extension Service, November 11).

PEANUT DISEASES IN CERTAIN TEXAS COUNTIES IN 1940

Glenn KenKnight

Peanut disease surveys were made in Wilson, Eastland, and Comanche Counties, Texas, during the past harvest season. In Wilson County, there had been very little precipitation during the growing season except for a rainy period during late June and early July. In Eastland and Comanche Counties there had been heavy precipitation during May and June followed by drought.

Surveys were made in Wilson County on August 3, 14, 22, and 26. Rotting of the nuts and other underground portions of the peanut plants, apparently due to southern blight (Sclerotium rolfsii), was wide-spread in occurrence. There was no wilting or death of the plants as a result of the disease, and the damage caused could be estimated only in fields where the peanuts were mature. Of a total of 23 fields of mature peanuts examined, some evidence of the disease was noted in 18. Reductions in yield as a result of rotting of the nuts and loss of nuts due to rotting of the stems in the 3 most severely affected fields were estimated at 30 percent, 50 percent, and 55 percent, respectively. It seems probable that the average loss for all peanut fields in the county was between 5 and 10 percent. Early peanuts were most severely affected.

A survey of peanut diseases in Eastland and Comanche counties was made October 18 to 19 at which time well over half of the crop had been harvested. Root-, stem-, and nut-rot of peanuts apparently due to southern blight was noted in all of the 13 fields examined (10 in Eastland County and 3 in Comanche County) with losses in yields estimated from a trace in some fields to 65 percent in the most seriously affected fields. The average of the estimated losses was about 12 percent. In these counties and in Wilson County also the disease appeared to have caused most damage in fields where the soil had cemented after rains and had not been cultivated thereafter.

Peanut leaf spot (Cercospora spp.) caused no appreciable damage in Wilson County where in many fields the disease was scarcely perceptible. In Eastland and Comanche Counties leaf spot was conspicuous in most peanut fields at the time of observation (October 18 to 19) but it had caused only slight defoliation. No control measures had been practiced.

(Texas Agricultural Experiment Station, Stockdale, Texas).

FALL INFECTIONS OF CEREAL RUSTS IN KANSAS

C. O. Johnston

Rusts have been more widely distributed and more severe on cereals in Kansas this fall than for many years. Infections appeared first on volunteer wheat plants and spread rapidly to fall-sown winter wheat. Both leaf [Puccinia rubigo-vera tritici] and stem rust [P. graminis] can now be found in nearly every field of wheat in central Kansas, infections being heavy in some localities.

Extreme heat and drought during July and the first week of August were unfavorable but conditions during the remainder of August and most of September were favorable for rust infection. Good rains in August resulted in an unusually large amount of volunteer wheat, oats, and barley in nearly all parts of Kansas, but especially in a north to south belt across the center of the State.

Stem rust appeared on volunteer wheat about September 1 and on volunteer oats a short time later. Warm weather in September and October stepped up the development of both rusts and induced the spread of the stem rust to the fall-sown crop. Early sowings of winter wheat now are heavily infected in some localities.

Leaf rust of wheat appeared about the same time as stem rust but did not spread rapidly during early fall. It was noted that stem rust was particularly severe on wheat until about mid-October when it began to subside and leaf rust began to increase very rapidly. Leaf rust is now much more prominent than stem rust.

Volunteer oats in the vicinity of Manhattan began heading around October 15. By that time they were abundantly infected with stem rust. In nearly all cases infection was heaviest on leaves near the ground and most of the plants were equally infected, suggesting that straw and leaves from the 1940 crop may have been a principal source of inoculum. No hard killing frost occurred in this part of Kansas until November 6 and stem rust on oats still is abundant.

Crown rust [P. coronata] of oats appeared on volunteer plants much later than stem rust. A few infection centers of crown rust were found on October 30 with indications that inoculum had been carried in by the wind.

Several fields of barley in which the plants were in full head have been seen recently. Stem rust was present in some of these but infections usually were light. Infections of net blotch [Helminthosporium teres] are abundant in most of the fields and in some cases it is severe.

(Division of Cereal Crops and Diseases, November 6).

CHECK LIST REVISION

Freeman Weiss

CARYOTA

CARYOTA spp., fishtail palms. Cult. under glass and in S. Florida.

Glomerella cingulata (Ston.) Spauld. & Schrenk., leaf & stem blight.

CASEARIA

CASEARIA spp., CAFEILLO, CAMBRON. Shrubs and small trees, West Indies.

Cephaleuros virescens Kze., algal leaf spot. P.R.
Cercospora caseariae F. L. Stevens, leaf spot. P.R.
Meliola ambigua Pat. & Gaill. and M. paulliniae F. L. Stevens, black mildew. Canal Zone, P.R.
Scolecopeltis micropeltiformis Toro, on leaves. P.R.

CASSIOPE

CASSIOPE spp. (C. HYPNOIDES (L.) D. Don, C. MERTENSIANA (Bong.) G. Don, and C. TETRAGONA (L.) D. Don). Evergreen shrubs of Pacific Coast, Alaska to Calif., and Northeastern States; sometimes cult.

Exobasidium vaccinii (Fckl.) Wor. (E. cassiopes Pk.), leaf gall. Alaska, Wash.
Lophodermium orbiculare (Ehr.) Sacc., on leaves. Alaska.

CASTANEA

CASTANEA spp., chestnut.

Armillaria mellea Vahl ex Fr., mushroom root rot. Cosmopolitan.
Botryosphaeria ribis var. chromogena Gross. & Dug. (Dothiorella ribis (Fckl.) Sacc.), canker and die back. Occasional.
Cenangium castaneae Schw. and C. albo-atrum Ell. & Ev., on dead branches. Pa., W. Va.
Ciboria americana Durand, on burrs. N.Y., Pa.
Clasterosporium sigmoideum Ell. & Ev., on dead branches. W. Va.
Corticium caeruleum Schrad. ex Fr., sapwood and heart rot. Southern Appalachians.
Coryneum pustulatum Pk., on dead branches. N.Y. to Ohio.
Cronartium cerebrum Hedgc. & Long, rust (III). N.C. (C and I on Pinus spp. Castanea spp. are also susceptible by experimental inoculation to several other Cronartium spp. normally having telia on Quercus spp.)
Cryptodiaporthe castanea (Tul.) Wehm. (Cytodiplospora castaneae Oud.), dieback and canker. Widespread.
(Cryptosporium epiphyllum Ell. & Ev.): Marssonina ochroleuca.
(Cylindrosporium castaneicolum (Desm.) Berl.): Mycosphaerella maculiformis.
Cytospora sp. (in part C. castaneae Sacc., conidial stage of Cryptodiaporthe castanea), twig blight. Widespread.
Cytosporella carnea Ell. & Ev., on dead branches. Va., W. Va.
Daedalea confragosa Bolt. ex Fr. and D. unicolor Bull. ex Fr., wood rot. Cosmopolitan.
D. quercina L. ex Fr., brown cubical heart rot, occasionally on living trees. Ohio and Va. northward.
Dermatea purpurascens Ell. & Ev., on dead branches. Pa., Va.
Diaporthe castaneti Nit. = D. eres Nit., on dead branches. N.Y.
Diplodia longispora Cke. & Ell., twig blight. N.J., N.Y. Diplodina sp. (in part D. castaneae Prill. & Del., conidial stage of Cryptodiaporthe castanea), twig blight. Widespread.
Dothiorella sp. (in part D. ribis (Fckl.) Sacc., conidial stage of Botryosphaeria ribis), twig blight. Calif., Miss.
Endothia gyrosa Schw. ex Fr., on branches and exposed roots, weakly parasitic. Pa. to Ind. and Southward.
E. parasitica (Murr.) P. & H. And., blight, canker. General from New England to Ala., also in Central States and locally in Pacific Coast States.
Fomes everhartii (Ell. & Gall.) Schrenk, heart rot. Ind.
F. ohiensis (Berk.) Murr. and F. scutellatus (Schw.) Cke., wood rot. Occasional.
(Fusicoccum castaneum Sacc.): Cytodiplospora castaneae Oud. Conidial stage of Cryptodiaporthe castanea.

CASTANEA--Continued

(Gloeosporium ochroleucum (Berk. & Curt.) Ell. & Ev.): Marssonina ochroleuca.
Gnomonia setacea Pers. ex Ces. & DeNot., on fallen leaves. Widespread.
Hymenochaete rubiginosa Dicks. ex. Lév., white pocket rot of logs and timber, N.Y. to Va.
Lenzites betulina L. ex Fr. and L. trabea Pers. ex Fr., wood rot. Cosmopolitan.
Marssonina ochroleuca (Berk. & Curt.) Humph., leaf spot. General.
Melanconis modonia Tul. (Coryneum kunzei Cda. var. castaneae Sacc.), on twigs. Widespread.
Melanconium cinctum Berk. & Curt., on twigs, Md. to Ga. and Tenn.
Microsphaera alni DC. ex Wint., powdery mildew. Widespread.
Monochaetia desmazierii Sacc., leaf spot. Va. and Ohio to Fla.
Mycosphaerella maculiformis (Pers. ex Fr.) Schroet., on fallen leaves. Widespread.
Panus rudis Fr. and P. stypticus Fr., wood rot. Cosmopolitan.
Pezicula cinnamomea (DC.) Sacc., on bark. S.C.
Penicillium sp., mold (nuts). Wash.
Pezizella lythri (Desm.) Shear & Dodge (including the conidial and pycnidial stages Hainesia lythri (Desm.) Höhn. and Sclerotiopsis concava (Desm.) Shear & Dodge), on leaves and stems. Occasional.
Phomopsis sp., twig blight. Md., Va.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Widespread.
(Phyllosticta maculiformis Sacc.): Mycosphaerella maculiformis.
(P. ochroleuca (Berk. & Curt.) Pk): Marssonina ochroleuca.
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.
Physalospora obtusa (Schw.) Cke., on twigs. Eastern States.
Phytomonas tumefaciens (EFS.) Bergey, crown gall. Occasional on nursery trees.
Phytophthora cambivora (Petri) Buis., collar rot, root rot. Ark., Ga., La., S.C., Tenn.
Pleurotus ostreatus Fr., wood rot. Southern Appalachians.
Polyporus spp. Besides those listed below as causing distinctive rots, usually of heartwood, the following spp. occur commonly on chestnut in association with decay of logs, slash and timber: P. adustus Willd. ex Fr., P. hirsutulus Schw., P. nidulans Fr., P. pargamenus Fr., P. pubescens Fr., P. pocula (Schw.) Berk. & Curt., P. tulipiferus (Schw.) Overh., P. versicolor L. ex Fr.
P. berkeleyi Fr. butt rot, heart rot. Eastern States.
P. croceus Pers. ex Fr., butt rot, white pocket heart rot. Eastern States.
P. gilvus (Schw.) Fr., sapwood and occasionally heart rot. Eastern States.
P. spraguei Berk. & Curt., brown cubical rot. Widespread.
P. sulphureus Bull. ex Fr., brown cubical rot, butt rot. Widespread.
Poria spp. especially P. ferruginea Schrad. ex Fr., P. medulla-panis Pers. ex. Cke., P. mucida Fr., P. mutans Pk. and P. viticola (Schw.) Cke., sapwood rot. Widespread.

CASTANEA--Continued.

Schizophyllum commune Fr., sapwood rot. Cosmopolitan
(Septogloeum ochroleucum (Berk. & Curt.) Dearn. & House) Marssonina ochroleuca.
(Septoria ochroleuca Berk. & Curt.): Marssonina ochroleuca.
Stereum fasciatum Schw., S. hirsutum Willd. ex Fr., S. ochraceo-flavum Schw., S. purpureum Pers. ex Fr., S. rameale Schw. ex Burt, S. umbrinum Berk. & Curt., S. versiforme Berk. & Curt., sapwood and occasionally heart rot. Cosmopolitan.
Strumella coryneoidea Sacc. & Wint., canker. Northeastern States.

CASTANEA CRENATA Sieb. & Zucc., Japanese chestnut. Cult.

Cryptodiaporthe castanea (Tul.) Wehm., dieback and canker. Eastern States.
Daedalea quercina L. ex Fr., heart rot. Pa.
Endothia parasitica (Murr.) P. & H. And., canker (resistant). N.Y. Pa.
Laestadia orientalis Ell. & Ev., on fallen leaves. La.
Phytophthora cambivora (Petri) Buis., root rot. La.
Septoria gilletiana Sacc., leaf spot. La.
Stereum hirsutum Willd. ex Fr., heart rot. Oreg.

CASTANEA DENTATA (Marsh.) Borkh., American Chestnut. Growth Regions 24, 25, 26, 27, 28, 29, 30.

Actinopelte japonica Sacc., on leaves (with Marssonina ochroleuca). N.J.
Coryneum castanicola Berk. & Curt., on twigs. Oreg.
Cryptospora cinctula (Cke. & Pk.) Sacc., on dead branches. N.J. to Va. and W. Va.
Daedalea quercina L. ex Fr., brown cubical heart rot. Ohio and Va. northward.
Endothia fluens (Sow.) Shear & Stevens, on branches (sapr.) Pa. and Ohio to S.C. and Miss.
E. gyrosa Schw. ex Fr., on branches and roots. Pa. and Ohio southward.
E. parasitica (Murr.) P. & H. And., throughout eastern range of host to Central States; has occurred locally but not become established in Pacific Coast States.
Fenestella phaeospora Sacc., on dead branches. Wash.
Fusicoccum castaneum Sacc., on twigs. Ind., Iowa, N.Y. (?conidial stage of Cryptodiaporthe castanea.)
Leptothyrium castaneae (Spreng.) Sacc., leaf spot. Fla., W. Va.
L. castanicolum Ell. & Ev., on fallen leaves. Miss., N.J., N.Y.
Marssonina ochroleuca (Berk. & Curt.) Humph., anthracnose, small leaf spot. Eastern States to S.C., Ore.
Melanconis modonia Tul., on branches. Eastern States, Calif., Oreg.
Melanconium cinctum Berk. & Curt., on twigs. Md. to Tenn.

CASTANEA DENTATA--Continued

Microsphaera alni DC. ex Wint., powdery mildew. Widespread.
Monochaetia desmazierii Sacc., large leaf spot. Va. and Tenn. to Ga.
Mycosphaerella maculiformis (Pers. ex Fr.) Schroet. and M. punctiformis (Pers. ex Fr.) Schroet., on fallen leaves. N.Y.
Myxosporium castaneum Pk., on dead branches. N.Y.
Pezizella lythri (Desm.) Shear & Dodge, on twigs & branches. Va. southward.
Phoradendron flavescens (Pursh) Nutt., mistletoe. Va. to Ind. and southward.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Widespread.
Phyllosticta castaneae Ell. & Ev., leaf spot. Md., Pa., W. Va.
P. fusispora Ell. & Ev., leaf spot. Ala.
Polyporus croceus Pers. ex Fr., butt rot, white pocket heart rot. Widespread.
P. spraguei Berk. & Curt. and P. sulphureus Bull. ex Fr., butt rot, brown cubical heart rot. Widespread.
Scolecosporium fagi Lib., leaf spot. Fla.
Strumella coryneoidea Sacc. & Wint., branch and trunk canker. Northeastern States.

CASTANEA MOLLISSIMA Blume, Chinese chestnut. Cult.

Cryptodiaporthe castanea (Tul.) Wehm., dieback and canker. Eastern States.
Cytospora sp., twig blight. Wash.
Diplodia sp. twig blight. Oreg., Tenn.
Endothia parasitica (Murr.) P. & H. And., canker (resistant). N.Y.
Fusicoccum sp., twig blight. Calif., Oreg.
Marssonina ochroleuca (Berk. & Curt.) Humph., leaf spot. Md.
Phomopsis sp., twig blight. Md., Va.
Phytophthora cambivora (Petri) Buis, root rot. Ga., La.
Stereum hirsutum Willd. ex Fr., heart rot. Oreg.

CASTANEA PUMILA (L.) Mill. (also C. OZARKENSIS Ashe), chinquapin.
Growth Regions 25, 27, 28, 29, 30.

Cronartium cerebrum Hedgc. & Long, rust (III). N.C.
Endothia fluens (Sow.) Shear & Stevens, on branches. Ark.
E. parasitica (Murr.) P. & H. And., canker. New England to S.C.
Leptothyrium dryinum Sacc., on leaves. Ala.
Melanconium cinctum Berk. & Curt., on twigs. N.C.
Microsphaera alni DC. ex Wint., powdery mildew. N.C., Va.
Monochaetia desmazierii Sacc., leaf spot. Ala., Fla.
Polyporus croceus Fr., butt rot, heart rot. Ark.
Phyllosticta castaneae Ell. & Ev., leaf spot. W. Va.
Phytophthora cambivora (Petri) Buis., root rot. Ark.

CASTANEA SATIVA Mill., Spanish chestnut. Formerly cult. in Middle Atlantic States southward, now abandoned because of susceptibility to blight; persisting to some extent in Pacific Coast States.

Coryneum kunzei Cda. var. castaneae Sacc., on twigs. Oreg. Conidial stage of Melanconis modonia.
Endothia parasitica (Murr.) P. & H. And., blight. Eastern and Pacific Coast States.
Gloeosporium castanicolum Ell. & Ev., leaf spot. Del.
Heterodera marioni (Cornu) Goodey, root knot.
Leptothyrium castanicolum Ell. & Ev., on leaves. N.J.
Marssonina ochroleuca (Berk. & Curt.) Humph., leaf spot. Eastern States.
Microsphaera alni DC. ex Wint., powdery mildew. Mass., N. C.
Phoma castanea Pk., on dead branches. N.Y.
Phyllactinia corylea Pers. ex Karst., powdery mildew. Ohio
Phymatotrichum omnivorum (Shear) Dug., root rot. Texas.

CASTANOPSIS

CASTANOPSIS spp. (C. chrysophylla (Hook.) DC., golden chinquapin, and C. sempervirens (Kell.) Dudl., California chinquapin). Growth Regions 1, 4, 5, 6; also cult.

Armillaria mellea Vahl. ex Fr., mushroom root rot. Oreg.
Cronartium spp. (C. cerebrum Hedgc. & Long, C. fusiforme (Pk.) Hedgc. & Hunt, C. strobilinum (Arth.) Hedgc. & Hahn), rust II and III). Experimental infection only.
Dothidella castanopsidis Dearn., leaf spot. Calif., Oreg.
Endothia parasitica (Murr.) P. & H. And., blight, canker. Experimental infection only.
Fomes igniarius (L. ex Fr.) Kickx., heart rot. Oreg.
Ganoderma oregonensis Murr., wood rot. Oreg.
Gloeosporium castanopsidis Dearn. & House, on leaves. Calif.
Melanconium cinctum Berk. & Curt., twig canker. Ga.
Microsphaera alni DC. ex Wint., powdery mildew. N.C.
Pezicula cinnamomea (DC.) Sacc., on bark. Oreg.
(Phyllosticta castanicola Ell. & Ev.): Dothidella castanopsidis.
Polyporus versicolor L. ex Fr., wood rot. Oreg.
Stereum hirsutum Willd. ex Fr., wood rot. Oreg.
Taphrina castanopsidis (Ell. & Ev.) Jenkins, leaf blister. Calif.
Valsa coronata Fr., on twigs. Oreg.

(Division of Mycology and Disease Survey).

ed

c

tes.